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# Parental Depression, Relationship Quality, and Nonresident Father Involvement With Their Infants

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and Jenn A. Leiferman<sup>3</sup>

## Abstract

The role of depression in nonresident fathers' involvement with their infant children is poorly understood. A three-factor model of father involvement was evaluated, and its association with parental relationship quality and depressive symptoms in both parents were tested. Data on 569 families from the Early Childhood Longitudinal Study were used. Confirmatory factor analysis supported a three-factor model of nonresident father involvement, which was then examined in a model consistent with Belsky's determinants of parenting framework. Noncohabitating mothers and fathers evidenced a significant correlation between their quantitative levels of depression. Relationship quality predicted all factors of father involvement and was negatively associated with depression in either parent. Disruptions in relationship quality mediated the link between depression in both parents and reduced father involvement. Perhaps because of depression's association with relationship quality, depressive severity was significantly correlated between nonresident mother and father.

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## Keywords

depression, nonresident fathers, parenting, coparenting

The stage for positive father involvement is set during the transition to parenthood and the father's early years with his new infant (Fagan & Palkovitz, 2007). During this period, the risks of parental depression have been well documented in mothers (Beardslee, Versage, & Gladstone, 1998). Less is understood, however, about depression in fathers of infants, a problem that is underscored by the growing literature documenting an increased incidence of prenatal and postpartum depression in fathers (Paulson & Bazemore, 2010). Recent studies have also begun documenting disruptions in parenting and child functioning when fathers are depressed (Goodman, 2004; Paulson, Dauber, & Leiferman, 2006; Perren, von Wyl, Burgin, Simoni, & von Klitzing, 2005; Ramchandani, Stein, Evans, & O'Connor, 2005). One significant limitation of this literature is that it is based on fathers who reside in the home with the child (described hereafter as "resident fathers"). This study aims to describe the role that paternal depression plays in predicting father–infant involvement in families where the father does not coreside with the child (described hereafter as "nonresident fathers").

## Parental Depression

Depression in fathers has only recently been identified as a predictor of negative outcomes in children (Ramchandani et al., 2005). Very few studies have examined the negative impact of depression on fathers' parenting behaviors, and existing studies have used samples that are composed largely or entirely of resident fathers (Lyons-Ruth, Wolfe, Lyubchik, & Steingard, 2002; Paulson et al., 2006). Moreover, research on nonresident fathers has paid little attention to the association between fathers' mental health and interactions with their children. In the only known study examining paternal depressive symptoms and father involvement following divorce, Stone and McKenry (1998) investigated paternal depression as a moderator of the fathers' identification with the parental role and involvement with his child, finding it to be nonsignificant.

In contrast to the limited focus on paternal depressive symptoms, the negative effects of maternal depression on both the mother's own parenting behaviors and on child developmental outcomes are well documented and suggest numerous risks, including child depression, disruptive behavior, poor school achievement, poorer sleep, eating, and regulation during infancy, and many others (Downey & Coyne, 1990; Leiferman, 2002; Lovejoy, Graczyk,

O'Hare, & Neuman, 2000). Although maternal depressive symptoms have been found to affect fathers' parenting behaviors in intact families with infant children (Mezulis, Hyde, & Clark, 2004), the extent to which maternal depressive symptoms affect nonresident fathers' level of involvement has not been investigated to date. As some evidence suggests that fathers buffer their children from the negative effects of maternal depression (Edhborg, Lundh, Seimyr, & Widstorm, 2003; Soliday, McCluskey-Fawcett, & O'Brien, 1999), nonresident father involvement may be a particularly important contributor to child well-being.

In addition to its impact on parenting, depression in either parent may negatively affect both the marital relationship and the coparenting relationship (Feinberg, 2002). In divorced or never-married families, coparenting is likely to be more difficult and involve greater conflict than in intact couples (Whiteside, 1998). An extensive body of literature documents the negative effects of conflict between parents on nonresident fathers' relationships with their children (Amato & Rezac, 1994; Dunn, 2004). For example, a meta-analysis of divorced parents of young children found that father involvement was influenced by the coparenting relationship quality. The negative effects of poor relationship quality between parents on father involvement may be compounded by depression in either parent (Whiteside, 1998). However, to the best of our knowledge, no study has examined parental depressive symptoms (each parent individually or combined) in conjunction with the quality of the mother–nonresident father relationship as important predictors of nonresident father involvement.

### ***Defining Nonresident Father Involvement***

Father involvement, broadly defined, has been associated with positive child outcomes, including well-being, cognitive development, and social competence (Cabrera, Tamis-LeMonda, Bradley, Hofferth, & Lamb, 2000; Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004). Among nonresident fathers, there is evidence that involvement also promotes children's well-being (Coley & Medeiros, 2007; King, 1994), but this body of evidence is both smaller and less consistent on child outcomes. Both of these limitations may be related to the less-developed status of paradigms for defining and measuring nonresident father involvement. This is partly because of the lack of nonresident specificity of developed models of resident father involvement (e.g., Bruce & Fox, 1999; Palkovitz, 1997), which do not address issues such as father–child visitation, child support, supplemental support of the mother, and others. Models that have attempted to define and measure

nonresident father involvement (e.g., Argys et al., 2007; Coley & Medeiros, 2007) tend to focus on specific aspects of nonresident father involvement, such as the quantity of father-child contact. Compounding these issues further is the focus of the literature on predominantly noninfant children, with most studies addressing children from toddlerhood through adolescence. Because of this, one objective of this study is to further develop a theoretically grounded method for defining and measuring nonresident father involvement with infant children.

A number of models address the structure and definition of father involvement, although the application of these in nonresident fathers, as mentioned above, has been limited. Historically, father involvement has been viewed from two broad perspectives: the first argues for a conceptualization built around specific parenting activities and leans largely on the frequency or duration of fathers' engagement in parenting, essentially defining father involvement by quantity. For example, the Bruce and Fox (1999) and Palkovitz (1997) models propose factors of involvement such as decision making, planning, interaction, direct caregiving, and teaching. The second approach, based on identity theory, regards father involvement as identification with the father role, commitment to fatherhood, salience of fatherhood, and self-efficacy (Henley & Pasley, 2005; Minton & Pasley, 1996). This approach suggests that involvement should be measured by what fatherhood *means* to the father. More recently, authors have argued for an integrative view of father involvement that combines these perspectives (Marsiglio, Day, & Lamb, 2000; Palkovitz, 2002), and some authors (Coley & Hernandez, 2006) are beginning to apply this integrated view to the study of predictors of father involvement.

Because so much of the extant research on nonresident father involvement is limited by a focus on single dimensions of father involvement (e.g., amount of contact with the child, payment of child support), results of these studies are narrowly focused and show correlations that are variable and often inconsistent. For example, child support payments have been associated with child well-being, whereas amount of visitation has shown inconsistent associations (Dunn, Cheng, O'Connor, & Bridges, 2004; King, 1994; Seltzer, 1994). These findings suggest that nonresident father involvement may be multidimensional, with different factors of involvement having different associated child outcomes. Moreover, the work that has been done with defining father involvement suggests dimensions that are different from resident fathers (Schoppe-Sullivan, McBride, & Ho, 2004).

The first aim of this study was to evaluate a three-factor conceptualization of father involvement derived from the above context to include factors for

(a) interaction frequency, as per the tradition of defining father involvement by quantity of fathering interactions; (b) father's emotional investment in fatherhood, as per identity theory; and (c) financial support of the child. The first two draw from the distinct traditions in measuring father involvement and their recent integration (Marsiglio, Amato, Day, & Lamb, 2000; Palkovitz, 2002). Financial support was included as a factor, as it has been historically prominent in the description of nonresident father involvement with the child (Amato & Gilbreth, 1999). It is predicted that this three-factor measurement model will show a strong and significant fit with the data in this study.

### ***Depression as a Predictor of Nonresident Father Involvement***

Understanding the role of parental depression in nonresident father involvement requires a conceptual framework that considers both individual and contextual factors. For this study, we used Belsky's (1984) model of parenting determinants as the groundwork for modeling the role of depression. Belsky's model lays out a system of individual and contextual influences on parenting behavior, which, although not specific to gender of the parent or the parenting behavior of interest, is a useful starting point for examining predictors of father involvement. This model identifies three major domains of influence on parenting: personal psychological resources of the parent, contextual sources of stress and support (e.g., marital relationship), and characteristics of the child. This model was applied to nonresident fathers' parenting behavior in a study by Carlson and McLanahan (2004), which focused on father characteristics, child characteristics, and relationship with the child's mother as a means of predicting involvement. A similar multicomponent approach was proposed by Coley and Hernandez (2006), who examined nonresident fathers of toddlers and found that parental conflict played a major role in inhibiting father involvement. Fagan and Palkovitz (2007) examined nonresident father involvement from a different perspective (risk and resilience) but also found that relationship (closeness) with the mother predicted father involvement.

In this study, we drew from Belsky's work to develop a predictive model of nonresident father involvement, which includes paternal depression (parent psychological characteristics), partner relations with the mother (relational factors), and child gender and wantedness (child factors) as predictors. Because of its availability and relevance to parent relations, we also included a measure of maternal depression in our model. Several model-based predictions were made: (a) depression in nonresident fathers will be directly associated

with a decrease in their involvement, (b) relationship quality with the mother will be directly associated with increased involvement, and (c) both maternal and paternal depression will negatively affect father involvement as an indirect effect through decreased relationship quality.

## Method

### *Data*

This study used data from 569 nonresident father families that were part of the 9-month wave of the Early Childhood Longitudinal Study–Birth (ECLS-B) Cohort (U.S. Department of Education, 2001–2002). The ECLS-B is a national longitudinal study designed to evaluate various influences on children's early development. More than 14,000 births in 2001 were sampled, yielding a final sample of 10,688 completed parent interviews at the 9-month data collection point with a full-sample response rate of 76.8%.

Data were collected from mothers, resident fathers, nonresident fathers, and infants using a combination of personal interviews, questionnaires, and developmental assessments of the infants. Nonresident fathers were defined as the target child's biological father, not residing in the household with the child, not currently engaged romantically with the mother, who had maintained a minimal level of contact with either the child or the child's mother in the 3 months prior to data collection. Data were only collected from nonresident fathers when the child's biological mother was the primary respondent and granted permission for contact.

### *Participant Characteristics*

Our sample was limited to only those cases with complete mother and nonresident father data. Of the 10,688 completed parent respondent interviews, 809 cases that were duplicate data on infant twins, 131 cases with a respondent not the child's biological mother, 433 cases where the nonresident father was ineligible because of lack of contact, 425 without mother permission, 9 where the mother remarried, and 599 refusals were not included. Thus, a total of 642 completed nonresident father questionnaires were available for analysis. Of these, 73 had significant missing data on some or all of the measures of interest and were excluded from analysis. This resulted in a final sample of 569 (Table 1).

In terms of nonparticipating nonresident fathers, there were a number of expected differences between these groups and our sample. By mother's report, participating fathers had more contact with their children, less conflict

**Table 1.** Demographic Characteristics of Sample

|   | Mother   |            | Father   |            |
|---|----------|------------|----------|------------|
|   | <i>n</i> | Percentage | <i>N</i> | Percentage |
| <b>Age (years)</b>                              |          |            |          |            |
| <20   | 126      | 22.1       |          |            |
| 20-24   | 224      | 39.4       |          |            |
| 25-29   | 124      | 21.8       |          |            |
| 30-34   | 58       | 10.2       |          |            |
| 35-39   | 31       | 5.4        |          |            |
| 40+   | 6        | 1.1        |          |            |
| <b>Race</b>                                     |          |            |          |            |
| White (non-Hispanic)                            | 133      | 23.4       |          |            |
| African American (non-Hispanic)                 | 284      | 49.9       |          |            |
| Hispanic  | 82       | 14.4       |          |            |
| Asian/Hawaiian/Pacific Islander                 | 14       | 2.5        |          |            |
| American Indian or Alaska Native (non-Hispanic) | 39       | 6.9        |          |            |
| More than one race (non-Hispanic)               | 16       | 2.8        |          |            |
| <b>Education</b>                                |          |            |          |            |
| 12th grade or below                             | 233      | 40.9       | 187      | 32.9       |
| High school diploma/GED                         | 175      | 30.8       | 224      | 39.4       |
| Vocational                                      | 14       | 2.5        | 131*     | 23.0*      |
| Some college                                    | 125      | 22.0       |          |            |
| Bachelor's degree or higher                     | 22       | 3.9        | 26       | 4.6        |
| <b>Work status</b>                              |          |            |          |            |
| Not in the labor force                          | 160      | 28.1       | 67       | 11.8       |
| Looking for work                                | 128      | 22.5       | 79       | 13.9       |
| Part time                                       | 107      | 18.8       | 76       | 13.4       |
| Full time                                       | 174      | 30.6       | 303      | 53.3       |

Note. Some data for nonresident fathers have been suppressed to avoid identification.

\* $p < .05$ .

with the mother, and were more likely to have lived with the mother. Fathers with more education were more likely to participate. African American fathers, when compared with expected rates based on the whole sample, more often participated (Table 2).



**Table 2.** Characteristics of Nonresident Fathers for Whom Data Were Available

|  | Participating<br>( <i>n</i> = 642) |                   | Refused ( <i>n</i> = 599) |                   | No Mother<br>Permission<br>( <i>n</i> = 425) |                   | No Contact<br>( <i>n</i> = 433) |                   | $\chi^2$ | <i>p</i> |
|--|------------------------------------|-------------------|---------------------------|-------------------|--|-------------------|---------------------------------|-------------------|----------|----------|
|  | <i>n</i> (%)                       | 95% CI            | <i>n</i> (%)              | 95% CI            | <i>n</i> (%)                                 | 95% CI            | <i>n</i> (%)                    | 95% CI            |          |          |
| Race   |                                    |                   |                           |                   |  |                   |                                 |                   | 55.863   | <.001    |
| White  | 126                                | (28.8; 24.5-33.0) | 117                       | (26.7; 22.6-30.9) | 97   | (22.1; 18.3-26.0) | 98                              | (22.4; 18.5-26.3) |          |          |
| African American   | 338                                | (35.2; 32.2-38.2) | 316                       | (32.9; 30.0-35.9) | 179  | (18.6; 16.2-21.1) | 127                             | (13.2; 11.1-15.6) |          |          |
| Hispanic   | 113                                | (24.5; 20.6-28.4) | 125                       | (27.1; 23.1-31.2) | 99   | (21.5; 17.7-25.2) | 124                             | (26.9; 22.9-31.0) |          |          |
| Other  | 93                                 | (32.4; 27.0-37.8) | 79                        | (27.5; 22.4-32.7) | 59   | (20.6; 15.9-25.2) | 56                              | (19.5; 14.9-24.1) |          |          |
| Father education   |                                    |                   |                           |                   |  |                   |                                 |                   | 54.920   | <.001    |
| <12th grade  | 223                                | (27.1; 24.1-30.1) | 288                       | (35.0; 31.7-38.3) | 164  | (19.9; 17.2-22.7) | 148                             | (18.0; 15.4-20.6) |          |          |
| High school  | 260                                | (36.5; 32.9-40.0) | 215                       | (30.2; 26.8-33.5) | 127  | (17.8; 15.0-20.6) | 111                             | (15.6; 12.9-18.2) |          |          |
| Some college   | 153                                | (48.0; 42.5-53.4) | 79                        | (24.8; 20.0-29.5) | 60   | (18.8; 14.5-23.1) | 27                              | (8.5; 5.4-11.5)   |          |          |
| Bachelor's or higher                                       | 33                                 | (38.4; 28.1-48.7) | 29                        | (33.7; 23.7-43.7) | 13   | (15.1; 7.6-22.7)  | 11                              | (12.8; 5.7-19.9)  |          |          |
| Marital status   |                                    |                   |                           |                   |  |                   |                                 |                   | 8.866    | .18      |
| Married  | 35                                 | (33.7; 24.6-42.7) | 38                        | (36.5; 27.3-45.8) | 20   | (19.2; 11.7-26.8) | 11                              | (10.6; 4.7-16.5)  |          |          |
| Never been married   | 508                                | (31.5; 29.2-33.7) | 475                       | (29.4; 27.2-31.7) | 315  | (19.5; 17.6-21.5) | 316                             | (19.6; 17.6-21.5) |          |          |
| Other  | 127                                | (29.7; 25.3-34.0) | 124                       | (29.0; 24.7-33.3) | 99   | (23.1; 19.1-27.1) | 78                              | (18.2; 14.6-21.9) |          |          |
| Bio father lived with                                      |                                    |                   |                           |                   |  |                   |                                 |                   | 59.932   | <.001    |
| Yes  | 256                                | (38.6; 34.9-42.3) | 231                       | (34.8; 31.2-38.4) | 125  | (18.8; 15.9-21.8) | 52                              | (7.8; 5.8-9.9)    |          |          |
| No   | 129                                | (27.9; 23.8-32.0) | 125                       | (27.1; 23.0-31.1) | 102  | (22.1; 18.3-25.9) | 106                             | (22.9; 19.1-26.8) |          |          |
|  | Mean (95% CI)                      |                   | Mean (95% CI)             |                   | Mean (95% CI)                                |                   | Mean (95% CI)                   |                   | <i>F</i> | <i>p</i> |
| Seen child (3 months)                                      | 54.86                              | (52.08-57.64)     | 44.98                     | (42.0-47.96)      | 26.47  | (23.10-29.84)     | 1.13                            | (.78-1.48)        | 83.57    | <.001    |
| Income   | 4.06                               | (3.84-4.28)       | 4.46                      | (4.17-4.75)       | 4.17   | (3.9-4.44)        | 4.02                            | (3.75-4.29)       | 2.78     | .04      |
| Mother's rating of relationship<br>quality with bio father | 1.25                               | (1.19-1.31)       | 1.47                      | (1.39-1.55)       | 1.98   | (1.86-2.10)       | 3.29                            | (3.17-3.41)       | 421.06   | <.001    |
| CES-D  | 6.41                               | (5.90-6.92)       | 6.95                      | (6.38-7.52)       | 6.98   | (6.22-7.74)       | 6.73                            | (5.93-7.53)       | .75      | .52      |

Note. 95% CI = 95% confidence interval; CES-D = Center for Epidemiological Studies–Depression Scale.

## Instruments and Measurement Models

**Depressive symptoms.** Depressive symptoms were measured by an abbreviated form of the Center for Epidemiological Studies–Depression Scale (CES-D; Radloff, 1977). The CES-D measures depressive symptomatology and has been widely used (Ross, Mirowsky, & Huber, 1983). Cronbach's alpha for the current sample was .88 for nonresident fathers and .86 for mothers. Because the short form of the CES-D was intended to measure a single dimension of depression, latent (composite) variables for *Depression* were constructed from CES-D scores for each parent. Each latent variable was measured with three parcels of four adjacent items from the instrument to permit the estimation of measurement error.

**Parental relationship quality.** Parental relationship quality was measured with four components, each comprising items that were developed specifically for the ECLS-B study: *Overall Relationship*, *Agreement*, *Negative Conflict*, and *Positive Conflict*. The overall quality of the relationship between the mother and nonresident father was assessed with a single item answered by both biological parents ("Overall, how is your relationship with your child's [biological parent]?"). Responses from mother and father combined into an *Overall Relationship* indicator. Among nonresident fathers, a series of items described various aspects of relationship quality with the child's mother. Six of these items assessed the frequency of parental agreement/disagreement on various topics related to child rearing. These items were combined into an *Agreement* indicator. An additional six items assessed conflict resolution strategies used most often by the child's parents, including both positive (discussing disagreements, keeping opinions to themselves, and compromising) and negative (arguing heatedly, criticizing each other, and hitting or throwing things) strategies. These items were combined into two indicators: *Positive Conflict* and *Negative Conflict*.

**Father involvement outcomes.** Nonresident father involvement was measured with indicators reported by mother and father, and these were used to construct the following latent variables for nonresident father involvement: *Time Together*, *Paternal Investment*, and *Financial Contribution*. Six items (three from each parent) were used to assess the amount of time nonresident fathers spend with their children. These items were used to measure two latent variables for *Time Together*, one for each parent.

Five items adapted by the ECLS from the Paternal Investment in Children Scale (Bradley, Whiteside-Mansell, Brisby, & Caldwell, 1997) were used to assess nonresident fathers' affection for and delight in their children. Fathers were asked to indicate how often they talk about their child, think about their

child, carry pictures of the child, think holding the child is fun, and think buying things for the child is fun. These five items were used to measure a latent variable for *Paternal Investment*.

Both mothers and fathers responded to four items regarding the fathers' financial contribution to the child. Parents were asked how often nonresident fathers bought things for child, gave the child's mother extra money to help out, helped pay medical expenses, and helped pay child care expenses. Several items in the ECLS-B assessed child support arrangements, overdue amounts, and typical payments, but the latter two suffered from missing data on more than 50% of cases. Type of child support arrangement (coded as "Legal," "Informal," and "No Arrangement") was reported by the mother and initially included on this factor as a categorical indicator but was dropped because it worsened fit and had a low loading ( $<.30$  standardized). Other items were used to measure two latent variables for *Financial Contribution*, one for each parent.

**Child characteristics.** To capture the *child characteristics* portion of Belsky's model, child gender and whether the father reported wanting the pregnancy, both factors that have been identified as important predictors of nonresident father involvement (Bronte-Tinkew & Horowitz, 2009), were coded as single-item dichotomous indicators, similar to Carlson and McLanahan's (2004) approach to modeling this portion of the Belsky model in nonresident fathers of infants.

**Contextual covariates.** Characteristics of the mother, father, and family were included in the models as covariates. These included mother age, child race, mother and father education, mother and father work status, household income, whether the child's parents had ever lived together, whether the father had other biological children, and whether there were other adults living in the household with the mother and child.

## Data Analysis

The direct and indirect effects being examined in this study were modeled using a structural equation modeling (SEM) approach and were all fit using Mplus 5.0 software (Muthén & Muthén, 2007). Measurement models were fitted separately before testing the full model. After initial measurement model evaluation, some model trimming was done to address problems in fit (described in the Results section). A direct effect from Mother Depression to Father Involvement was tested but removed for nonsignificance. Indirect effects of Mother and Father Depression on Father Involvement via Relationship Quality were also tested.

Missing data on study variables ranged from 1% to 14%, with the exception of one variable ("How often do you help pay for child care?") that was missing 29% of its data. To address missing data, full-information maximum likelihood estimation method was used (Muthén & Muthén, 2007). This method assumes that data are missing at random and uses all data available to estimate parameters from covariance matrix elements that have at least 10% coverage (the lowest coverage in these data was 63.3%). The complex design of the ECLS-B was also addressed in final models via a complex samples function in Mplus, which both applies sampling weights and calculates estimates and standard errors that are similar to those produced in other popular complex samples software (e.g., SUDAAN).

## Results

### *Depressive Symptoms*

Based on the cutoff scores on the abbreviated 12-item CES-D provided by the ECLS (5-9: mild, 10-14: moderate, 15+: severe; U.S. Department of Education, 2001-2002), 28% of mothers and 29% of nonresident fathers experienced moderate or severe depressive symptoms. In 10% of cases, both parents had moderate or severe symptoms, and in 53% of cases neither parent had moderate or severe symptoms. Mean scores were 6.91 ( $SD = 6.0$ ) for mothers and 7.18 ( $SD = 6.87$ ) in fathers. Maternal and paternal CES-D scores were significantly correlated ( $r = .18, p = .01$ ) and this correlation increased to .22 ( $p = .005$ ) in the full model.

### *Measurement Models*

Initial analyses used confirmatory factor analysis (CFA) to evaluate the fit of the latent variables. Measurement models were constructed as follows: (a) maternal and paternal depression, (b) relationship quality, and (c) nonresident father involvement.

The CFA model for maternal and paternal depression showed good overall fit,  $\chi^2(8) = 13.048, p = .11$ ; comparative fit index (CFI) = .997, Tucker–Lewis index (TLI) = .994, root mean square error of approximation (RMSEA) = .033. All latent variable indicator loadings were large and significant, with standardized estimates ranging from .739 to .851.

The CFA model for Parental Relationship showed good overall fit,  $\chi^2(2) = 2.46, p = .29$ ; CFI = .99, TLI = .99, RMSEA = .02. Loadings were moderate in size and significant, with standardized estimates ranging from .503 to  $-.638$ .

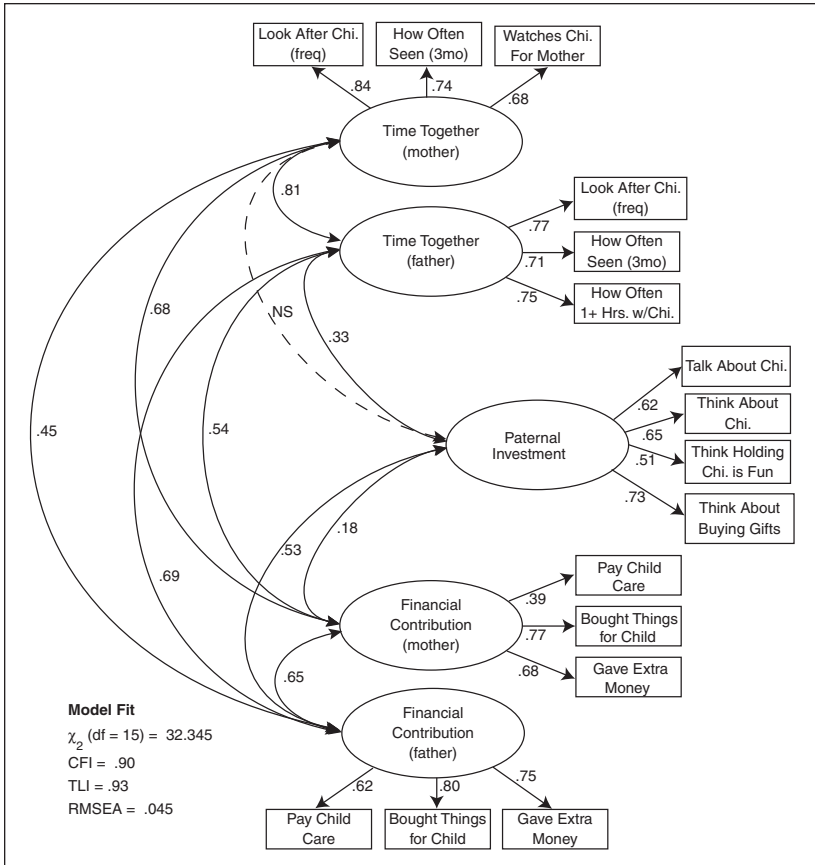
Because portions of nonresident father involvement were measured with identical items administered to mothers and fathers, a modified correlated uniqueness model was used for this measurement model. Within this framework, residuals for pairs of matched items were correlated in the measurement model (see Hoyle, 1995). The CFA model for Nonresident Father Involvement initially demonstrated marginal fit,  $\chi^2(153) = 367.11, p < .001$ ; CFI = .89, TLI = .86, RMSEA = .05. This model was refined by dropping one item with ambiguous cross-loadings ("How do you feel about being a father?") and three items with low-loading ( $<.45$ ; mother and father report of payment for medical expenses and carry pictures). This final model demonstrated acceptable fit,  $\chi^2(15) = 32.35, p < .001$ ; CFI = .90, TLI = .93, RMSEA = .045. All loadings were significant (Figure 1).

### *Structural Model Predicting Father Involvement*

In the full model, we tested the fit of the hypothesized predictors of father involvement. Although maternal and paternal depression and parental relationship quality were the focus of this model, the child characteristics of wantedness and gender, along with a set of contextual and demographic covariates were also evaluated. This full model demonstrated acceptable fit,  $\chi^2(371) = 631.926, p < .001$ ; CFI = .91, TLI = .89, RMSEA = .035. Full model results can be seen in Figure 2 (for visual clarity, measurement models are not shown for aforementioned elements of the structural model).

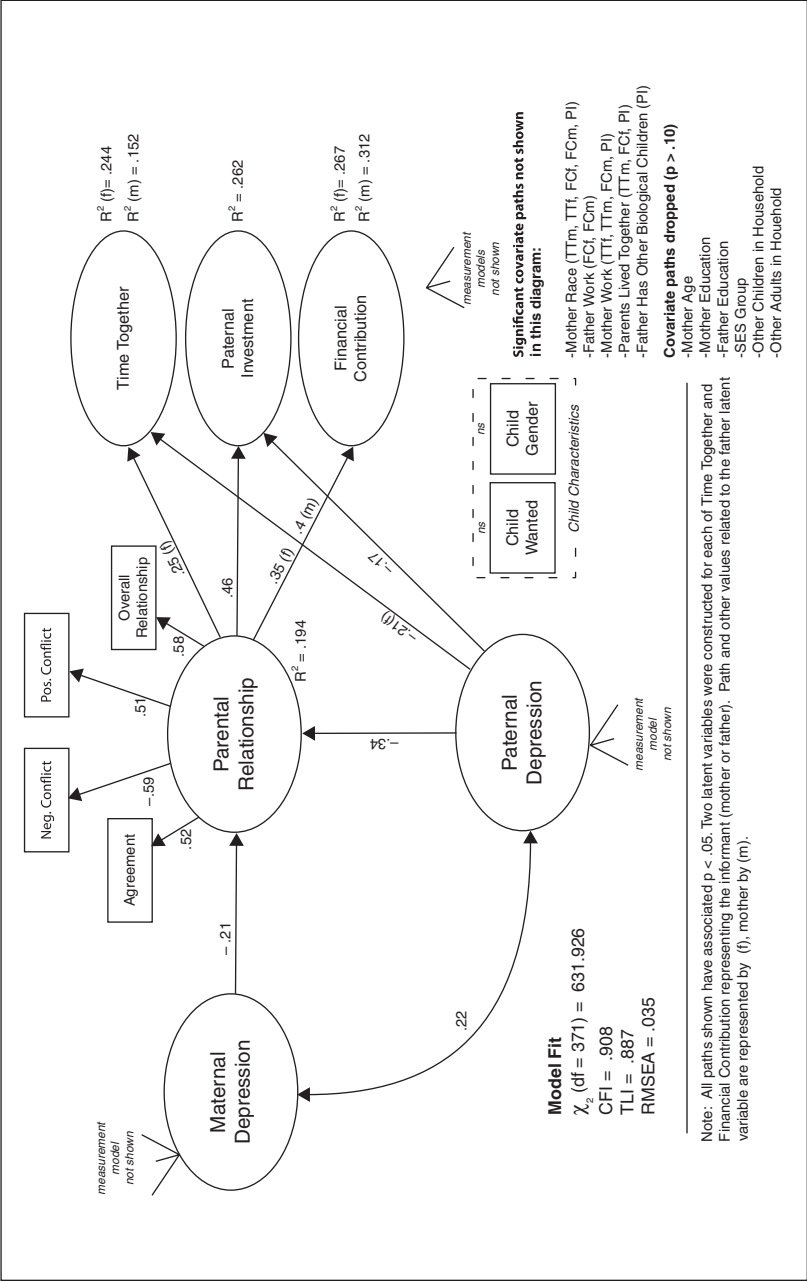
In terms of direct effects, both maternal and paternal depression were negatively associated with parental relationship quality, with paternal depression demonstrating a stronger path. Overall, paternal and maternal depression accounted for almost 20% of the variance in parental relationship quality. Parental relationship quality was a predictor of all three components of Father Involvement (father report) and Financial Contributions (mother report). Father depression directly predicted Time Together and Paternal Investment, but maternal depression had no direct effect on any father involvement construct. On father-reported involvement, 24% to 31% of variance was accounted for in the model. On mother-reported involvement, 15% of variance in Time Together and 31% in Financial Contribution were explained.

In terms of child characteristics, neither child wantedness (father report) nor child gender were predictive of involvement. Other covariates that were nonsignificant included mother's age, mother's or father's education, socioeconomic status, number of other children in the household, or number of



**Figure 1.** Measurement model for nonresident father involvement

other adults in the household. Significant predictors of increase in father involvement included mother's race (more involvement when mothers were White), either parents' work status (more involvement when either was unemployed), whether the parents had lived together in the past (more involvement when parents had lived together in the past), and whether the father has other biological children (more involvement when the father had other biological children). It should be noted that breast-feeding status was not examined in the current study because only 27 out of the 569 infants were currently breast-feeding.



**Figure 2.** Full model predicting three factors of nonresident father involvement

### *Mediation Effects for Relationship Quality*

Indirect effects were estimated in the full model to test the hypothesis that Relationship Quality mediates the association between parental depression and nonresident father involvement. Significant negative indirect effects were found from father depression via Relationship Quality on all three father-reported involvement latent variables, with standardized values ranging from .086 to .156. Father depression also exerted a significant negative indirect effect via Relationship Quality on mother-reported Financial Contribution. Mother depression had a significant negative indirect effect on Paternal Investment, also via Relationship Quality.

### **Discussion**

The findings of this study add to our understanding of predictors of nonresident father involvement and depression in early parenthood in several ways: First, we evaluated a multidimensional model of nonresident father involvement. Second, we examined the direct effect of paternal depression and the indirect effect of maternal depression on father involvement. Finally, a mediational model that includes relationship quality as an important mechanism through which depression in either or both parent disrupts father involvement was evaluated.

### *Nonresident Father Involvement*

Previous studies of nonresident father involvement have defined involvement by amount of contact with child, financial support, or overall relationship quality (Amato & Gilbreth, 1999). Models of father involvement based primarily on resident fathers do not extend to nonresident fathers. This study proposed a three-factor model of involvement that incorporated quantity of contact, role identity, and financial support. Portions of this model were validated with both mother's and father's report. Our model was supported by the data and suggests that nonresident father involvement, with infants, is reasonably measured with these three factors. The association of these with established predictors of father involvement lends further credence to their validity.

Factors of father involvement are clearly interrelated. Between father-reported involvement, correlations ranged from .33 to .69. Both father's and mother's report of Time Together were moderately associated with Financial Contribution, suggesting a close link between the father's contact with the child and his provision of material support. This finding is consistent with



previous studies suggesting that fathers who spend more time with their children are more likely to provide financial support (Doherty, Kouneski, & Erickson, 1998). In terms of Paternal Investment, it was associated with both mother's report of Financial Contribution and father's report of Time Together and Financial Contribution.

With several recent exceptions, studies of nonresident father involvement have relied on mother report. Studies that have compared mother and father reports suggest that mothers and fathers often disagree in their reporting of fathering behaviors (Pruett, Williams, Insabella, & Little, 2003; Seltzer, 1994). In our model, fairly strong agreement was observed between mother and father report, suggesting that disagreement may not be as substantial among parents of infants.

### *Depressive Symptoms, Relationship Quality, and Nonresident Father Involvement*

Rates of significant depression found in this sample were high for mothers (28%) and fathers (29%) and consistent with previous studies (Clarke-Stewart, Vandell, McCartney, Owen, & Booth, 2000; Wade & Cairney, 2000; Wilson & Brooks-Gunn, 2001). Paternal and maternal depressive symptoms demonstrated a negative association with Parental Relationship quality. This is consistent with interpersonal theories of depression, inasmuch as they predict increased conflict and overall disruption in relationship quality when one member of the pair is depressed (Rehman, Gollan, & Mortimer, 2008). Although this literature largely addresses intimate relationships, it also details relationship disruption among roommates and friends (Coyne, 1985; Coyne et al., 1987) as a consequence of depression. The latter is relevant to the current sample, where parents no longer maintain a romantic relationship and is also consistent with the decrements in relationship quality between non-coresident parents that have been found to be associated with elevations in paternal depression (Bronte-Tinkew, Moore, Matthews, & Carrano, 2007).

Parental Relationship Quality was positively associated with all domains of father involvement. Although the effect of Parental Relationship on Time Together was modest, this factor was also associated with Paternal Depression, suggesting that depressive characteristics (such as reduced energy or anhedonia) may play a strong role in limiting the father's time with the child. The relatively strong association between Parental Relationship and Paternal Investment and Financial Contribution may be due, in part, to mothers acting as "gatekeepers" to the children (Whiteside, 1998). This is particularly relevant for infants, who

are unable to clearly state their preferences. In families in which parental relationship is poor, this “gatekeeping” mechanism may present more difficulties to the father.

Depression in both mothers and fathers negatively affected Parental Relationship quality and indirectly affected father involvement. Indirect effects from Paternal Depression via Parental Relationship quality were observed in all three domains of father involvement. Maternal Depression had an indirect effect via Parental Relationship to Paternal Investment. Taken together, these effects suggest that depression in fathers negatively affects his involvement with the child directly and disrupts the father’s relationship with the mother such that involvement is further reduced. The indirect path from Maternal Depression was tied only to decreases in fathers’ affection for the child and his investment in fatherhood. Studies of intact families have shown that fathers tend to respond to marital conflict by withdrawing from both their marital and parenting relationships (Fincham, Beach, Harold, & Osborne, 1997). A similar pattern has also been found in divorced families with older children (Pruett et al., 2003). Our findings suggest that this pattern of withdrawal in fathers is compounded by depressive symptoms, which may decrease motivation to continue to engage in difficult, conflictual interactions.

### ***Study Limitations***

This study has several limitations. First, cross-sectional data limit the determination of effect direction. Thus, alternative explanations of the associations between depression, relationship quality, and involvement must be considered. Further investigation of potential bidirectional effects using longitudinal data is warranted. A second limitation relates to the CES-D as a measure of depression. This instrument estimates depressive symptoms but does not produce a clinical diagnosis. Third, items used to measure relationship quality were reported mostly by fathers. Although this does add to previous studies that have typically examined relationship quality from the perspective of the mother only (Whiteside & Becker, 2000), it would be preferable to measure this from both parents’ perspectives. Finally, only those nonresident fathers who had maintained a minimal level of contact with their child and were “selected” by the child’s mother were included in the study. As such, the present study neither addresses the potential role of depression in fathers with minimal or no contact with their children nor does it account for fathers with whom the custodial mothers experience conflict substantial enough to decline study participation.

## Conclusions and Implications

Despite their limitations, the findings of this study suggest the importance of depressive symptoms in nonresident fathers and their ex-partners in understanding fathers' level of involvement with their infant children. Moreover, these findings suggest that depressive symptoms and relationship quality remain salient systems factors even when the parents no longer share a romantic relationship and do not reside in the same home.

## Authors' Note

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